

ACHIEVING EQUAL OPPORTUNITY IN NASA:

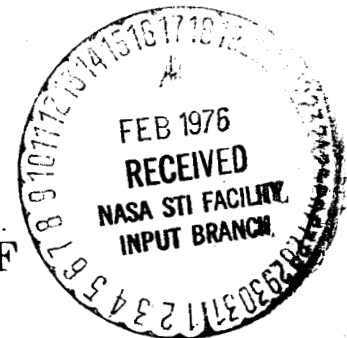
AN ASSESSMENT OF NEEDS AND RECOMMENDATIONS FOR ACTION

(NASA-CR-146356) ACHIEVING EQUAL
OPPORTUNITY IN NASA: AN ASSESSMENT OF NEEDS
AND RECOMMENDATIONS FOR ACTION (National
Academy of Public Administration) 74 p HC
\$4.50

N76-16971

Unclas
13589

CSC 05A G3/81



A REPORT OF A PANEL OF
THE
NATIONAL ACADEMY OF PUBLIC ADMINISTRATION
JANUARY 30, 1976
WASHINGTON, D. C.

NASW-2351

January 30, 1976

ACHIEVING EQUAL OPPORTUNITY IN NASA:

AN ASSESSMENT OF NEEDS AND

RECOMMENDATIONS FOR ACTION

A Report of a Panel of
The National Academy of Public Administration
Washington, D.C.

CONTENTS

SUMMARY OF FINDINGS AND RECOMMENDATIONS	iii
PART I: ORIGINS OF STUDY AND PANEL MANDATE	1
PART II: CONTEXT: THE DIMENSIONS AND SCOPE OF THE EQUAL OPPORTUNITY CHALLENGE IN NASA	3
A. DILEMMA SURROUNDING FEDERAL EQUAL EMPLOYMENT LAW	4
B. NASA'S MISSION AND HOW IT IMPACTS THE EQUAL OPPORTUNITY PROGRAM	6
C. SPECIAL PROBLEMS FOR NASA STEMMING FROM REDUCED MANPOWER CEILINGS	8
D. SCARCITY OF FEMALES AND MINORITY MALES IN THE NASA RELATED WORK FORCE	8
PART III: STRENGTHENING THE CURRENT EQUAL OPPORTUNITY PROGRAM	
A. ASSESSING WHERE NASA STANDS	9
B. THE STATISTICAL RECORD	13
C. DYNAMICS OF THE EQUAL OPPORTUNITY PROCESS	16
D. DEFINITION OF ROLES	19
E. COMMUNICATIONS AND REPORTING	22
F. EQUAL OPPORTUNITY COMPLAINTS SYSTEM	26
G. EQUAL OPPORTUNITY COUNSELING PROGRAM	28
H. EQUAL OPPORTUNITY AND PERSONNEL ADMINISTRATION	29
I. MINORITY BUSINESS ENTERPRISE	38
J. CONTRACT COMPLIANCE	40
K. COMMUNITY RELATIONS	41
L. THE NASA EQUAL OPPORTUNITY SELF-EVALUATION	42
PART IV: APPLYING THE EXPERIENCE OF OTHER ORGANIZATIONS	44
A. GENERAL ELECTRIC COMPANY	45
B. SEARS, ROEBUCK AND COMPANY	49
PART V: A MANAGEMENT STRATEGY FOR SOCIAL CHANGE	52
Appendix A - Project Panel Members	
Appendix B - General Electric EO/MR Measurement Format	

Summary of Findings and Recommendations

1. Increasing the Ratio of Minorities and Women

The most obvious and readily measurable indicator of progress for an equal opportunity program is the increase in the ratios and level of placement of women and minority men in the work force. In recent years, NASA has stepped up its equal opportunity efforts by elevating the equal opportunity staff at Headquarters and in the field centers, increasing the budget and manpower resources, instituting a wide variety of programs, and attempting to orient managers and supervisors to the importance of equal opportunity. These activities have been aimed both at increasing the intake of females and minority males and upward mobility for those in the present work force.

NASA recruiting programs focus not only on the present market but on increasing the pool from which future hiring will take place. Recognizing the serious nature of the constraints imposed by the continuation of low manpower ceilings, competition from the private sector, and the scarcity of minorities and women in the engineering, scientific and technical categories, the agency has placed increasing emphasis on career motivation programs to reach younger ages in the school population.

Over the past two years, while NASA's total employment has decreased by six per cent, the total minority work force has increased from 5.2 to 6.8 per cent while female employment ratios have increased from 16.6 to 17.5 per cent. Some progress has also been achieved in the distribution of women and minority men in professional categories.

Although many of the most obvious steps have been taken in both hiring and upward mobility programs, there still remain a number of ways for improving the equal opportunity profile in NASA.

Recommendations. The specific areas where more attention might be focused appear to be the following:

a. Hiring for senior management posts - More female and minority male candidates should be considered and the Equal Opportunity office should be better informed of searches for top level talent.

b. Supervisor accountability - Supervisors, particularly at the first line, play a major role in hiring decisions. The process for evaluating their EO performance in hiring decisions should be tied to a more effective consequence system.

c. Hiring off Civil Service registers - The Civil Service requirements which impede hiring of minorities off registers are a major obstacle to EO. Although there are fewer opportunities for hiring, efforts should be increased to place minorities into non-professional and professional positions at all levels. NASA should continue to press on the problem of the registers with those who can break the deadlock at the Civil Service Commission.

d. Increasing the resource pool - In the final analysis, the main way to achieve equal opportunity in high technology organizations will be increasing the resource pool. No one agency can do this alone. NASA should take the lead in a collaborative public/private effort to encourage women and minority men to enter engineering scientific and technical education and training programs.

e. Upward mobility - Emphasis on external recruitment should not be allowed to overshadow the importance of upward mobility of women and minority men in the existing work force. Upward Mobility should be stressed not only through promoting from within but also

through encouraging the progression of females and minority males into NASA's mainstream activities.

2. A Strategy for Managing Social Change

As a basis for making recommendations on how the equal opportunity program might be strengthened, the panel sought to assess where NASA stands along a route leading to the achievement of EO goals. While noting that progress varies from one part of the organization to another, the consensus of the panel was that NASA stands at a point between concern and commitment.

The above-cited changes in numbers demonstrate that NASA is beginning to move in the right direction. No one would contend, however, that the problems which created unequal opportunity have been eliminated. In fact, the changing of numbers is only one aspect, the outward and visible sign, of a struggle for fundamental social change the full implications of which seem not to have been fully grasped throughout NASA's managerial hierarchy. The panel sought to point the way to a long-range management strategy and a comprehensive system for implementing such social change.

The strategy consists of five essential elements - policy, objectives, performance standards, feedback, and consequence system. Parts of these elements exist, but they have not all been developed and put together in a way to assure optimal prospects for achieving equal opportunity.

Recommendation. The Administrator and Deputy should devise and implement such a management strategy. In this process, they should seek support from the Office of Equal Opportunity Programs and the Equal Opportunity Council.

3. Definition of Roles

The equal opportunity office is primarily an advisory function whose roles and responsibilities embrace a complex array of activity including advocating, advising, monitoring, supporting and, in some instances, managing programs. As the EO staff has assumed various operational and program responsibilities, the question of who is accountable for achieving equal opportunity is in danger of being obscured. To the extent that responsibility for equal opportunity appears to be shared with or transferred to the EO staff, pressure on the line may be reduced.

Some sharpening or perhaps redefinition of roles and responsibilities between the EO office, the personnel office and line management appears to be indicated. Recognition that ultimate accountability for attaining equal opportunity is vested in line management is critical. Recommendation. One way to cue line management on their continuing responsibility would be to require reporting on equal opportunity in various reports on program status, including program and project reports at the monthly General Management Review.

The Administrator and Deputy should request the EO Council to provide a forum for consideration of this question of roles and responsibilities.

4. Administration of Equal Opportunity

In terms of the number of people involved, dollars allocated, program activities, report writing and committees meeting, NASA is extremely busy in the equal opportunity field. This activity does not necessarily equate with progress in achieving the goals of equal opportunity. Such progress comes about only when the internal dynamics of

an organization change in the desired direction. Thus far, the change in NASA has not penetrated very deeply despite repeated statements of endorsement by senior administrators. **Women and minority men** significantly involved in the mainstream of agency activities are still rare. The equal opportunity staff has itself become a **female and minority male enclave**, relating to agency line management only in equal opportunity matters.

The internal administration of the equal opportunity program is hampered by several gaps in communications. The principal gap is a separation of equal opportunity staff from line management at all levels. Equal opportunity has yet to be fully perceived by NASA's technically oriented management as an aspect of human resource management offering great potential for benefiting the entire work force.

A second gap has been evident in the Agency equal opportunity staff between staff members and the Assistant Administrator. This gap is in the process of being bridged with the new organizational structure now being put into place in the Equal Opportunity Office. Care must be taken, however, to assure that additional layering does not lend itself to more communications gaps.

A third gap exists between equal opportunity staff in Washington and the field. Although various formal reporting mechanisms are in effect, the Headquarters-field center relationships in equal opportunity are not as cohesive as they should be.

Recommendations. Major emphasis should be placed on improving the quality of administration of the equal opportunity program through better flow of information and communications. Line managers should work with the **female and minority male** elements to foster a better understanding of

technical environment. The most effective way to foster such understanding is to involve women and minority men to the maximum extent feasible in non-EO related work and in future planning. The tendency to concentrate females and minority males strictly in equal opportunity work should be balanced by more mobility from equal opportunity staffs into other areas of activity, particularly in professional and administrative categories. Continued attention needs to be given to the open flow of communications and maintenance of good informal working relationships among all EO offices, within the Washington office and between Washington and the field. Newsletters can serve a useful purpose in reaching several different audiences.

5. Relationships Between Personnel and Equal Opportunity Functions

Although equal opportunity has been established as a separate function in NASA, the personnel function retains a critical role in achieving equal opportunity goals. The working relationships between the personnel offices and the equal opportunity staffs generally appear to be supportive and mutually reinforcing. NASA has developed many innovative and useful personnel programs designed to recruit and train females and minority males. The fact remains, however, that NASA has yet to achieve a personnel profile approaching an acceptable level of female and minority male representation.

The personnel function, as cited in the preceding items on management strategy and role definition, is critical to the attainment of equal opportunity. At the field centers, where personnel offices are many times larger than equal opportunity offices, the latter are quite often operating various types of training, education and other programs. The low ratios of females and minority males working in

personnel offices is one of the most serious shortcomings of the overall personnel function with respect to equal opportunity.

Recommendations. Personnel offices should be maintaining a steady pressure on line management to adopt personnel practices more conducive to achieving equal opportunity. All personnel actions should be considered in light of the opportunity they afford to improve the relative position of the female and minority male work force. Personnel offices throughout the agency should strive for higher ratios of females and minority males within their own complements.

6. Learning from the Experience of Other Organizations

In looking to other organizations for the lessons of experience that are relevant to NASA, it is necessary to bear in mind that the special circumstances of NASA's situation limit the extent of comparability. The high level of engineers and other advanced technical personnel in NASA, the limited number of openings for recruitment, and the strict ceilings on higher level positions all impose constraints on NASA. It is also apparent from examining the experience of other organizations that outstanding success records are quite rare.

What does emerge from examining the experience of other organizations is that significant change occurs only where instigated by the highest level of management. The sense of commitment is created not by words alone but by specific actions which serve as cues of top management intent. Only the Administrator and Deputy Administrator are in a position to give these cues which will signal other layers of management that equal opportunity is to be pursued as an integral part of NASA's mission.

An essential component of several successful EO programs examined by the panel has been an EO measurement system incorporated in the evaluation of business performance of managers. Rewards and penalties keyed to EO performance produce results where mere admonition fails.

Recommendations. The Administrator and Deputy should actively seek ways to cue other elements of agency management of the serious nature of their intent to achieve the goals of equal opportunity. One of the most effective cues would be the adoption of a strategy for managing social change. (Ref. No.2 above, p. v)

7. Equal Opportunity Complaints and Counseling

The equal opportunity complaints system which NASA is required to follow under Federal law is complex and cumbersome. An increase in use of the system in the past year may indicate that some people have gained a belief that it can be made to work for them. But there remains a widespread lack of credibility in the system at lower levels. Major causes of formal complaints are lack of consideration for advancement from within and for training programs, both in-house and external. Promotional opportunities can be better advertised, and more women and minority men can benefit from training.

The equal opportunity counseling system, like the complaints system, has been used more extensively in the recent past than before. The more effectively it functions, the less demand will be placed on the formal complaints system with its attendant high costs and disruptions. Despite efforts to upgrade the counseling system, however, there still remains evidence that it has yet to gain credibility among lower rank employees.

Recommendations. NASA should collaborate with other agencies in pressing the Civil Service Commission for a more workable system to handle formal complaints. The counseling system requires still further effort to establish greater credibility in its practical effectiveness.

8. Minority Business Enterprise

NASA support for minority business enterprise represents a major aspect of the total equal opportunity effort. Over the past five years impressive progress has been made in increasing the dollar volume of minority business contracting. But the minority share of the total is still small. A variety of special programs are being carried out as ways of improving the capability of minority firms to compete for NASA contracts. Very little effort has been made to involve businesses owned and operated by women.

Recommendation. The emphasis on sub-contracting with minority firms by NASA prime contractors should be maintained, but not at the cost of reducing pressure for more minority firms as prime contractors. Firms owned and operated by women should also be encouraged to bid on contracts and sub-contracts. The experience of the Minority Business Enterprise Councils should be evaluated to ascertain if that program is living up to its full potential.

9. Community Relations

There is a common area of interest between the community relations activity of the equal opportunity office and the community and human relations activity of the Office of Public Affairs. However, the jurisdictional relationship has never been clearly defined, and there may well be ways to strengthen both programs through greater cooperation.

NASA field centers could take far more active roles in advancing equal opportunity in their respective communities. Failure to assume more of a leadership role in the community contributes to the negative image of NASA in the area of equal opportunity and human resources.

Recommendation. The Administrator should assure that Equal Opportunity and Public Affairs Offices work out informal relationships leading to more effective cooperation toward their common goal of promoting equal opportunity.

Field centers should strengthen their efforts to project an image in their communities of agency awareness of female and minority male aspirations and of NASA commitment to equal opportunity.

10. Self-Evaluation

The recently completed self-evaluation of equal opportunity was a useful and illuminating exercise well worth the considerable investment of time and effort on the part of all involved. Some kind of self monitoring process should be carried out on an annual basis, although an evaluation on the scale of that just completed is not merited more than every two or three years.

Recommendation. The self-evaluation process should be closely tied to a management strategy for change. It should consider each of the five elements of such a strategy. Has policy been developed to guide the efforts of all those responsible for equal opportunity over a long range period and is that policy fully integrated with NASA's overall planning? Are objectives, or goals, set out in the form of milestones over an extended period? Are performance standards well designed to provide a meaningful system of measuring progress? Are the feedback system and the consequence system working effectively?

The Equal Opportunity Council should play a major role in assuring that self-evaluation incorporating all these elements is conducted.

I. Origins of Study and Panel Mandate

In May 1974, NASA assigned the National Academy of Public Administration the task of conducting a study of the agency's equal opportunity program. The Academy was requested to perform three major functions: (1) seek out ways in which the agency can strengthen the current EO program; (2) identify equal opportunity approaches adopted by other organizations which might be applicable to NASA's needs; and (3) serve as a source of advice and counsel to NASA in considering future equal opportunity goals.

In accord with its usual practice, the Academy appointed a panel to carry out this assignment. The membership of the panel is shown at Appendix A. Over the course of the assignment, the panel has maintained a continuing consultation with the Office of Equal Opportunity Programs (OEOP) in NASA.

As with most consulting assignments extending over a prolonged period, the conditions of this task have undergone significant change. Dr. Harriett Jenkins replaced Dr. Dudley McConnell as Assistant Administrator for Equal Opportunity Programs, and there have been other important changes in various positions at Headquarters and in the field within the personnel and other offices concerned with equal opportunity. NASA has been subjected to extensive oversight by Congressional Committees. The General Accounting Office and the Civil Service Commission have also monitored the agency's performance. Private civil rights organizations have also kept NASA developments under scrutiny. Finally, the decision was taken by NASA, midway in the course of the Academy's consultation, to conduct its own self-evaluation of the equal opportunity program. This self-evaluation was a major undertaking which imposed heavy demands

on agency management at Headquarters and in the field. Panel plans to visit nearly all the field centers were cancelled in order to await the outcomes of NASA's own self-evaluation and to avoid the possibility of putting too many pressures on the centers during the same time period.

In the months following the self-evaluation members of the panel have visited four field centers and Headquarters where they have conducted inquiries designed to gain firsthand impressions of the state of equal opportunity in NASA.¹ They have attended the two most recent meetings of the Equal Opportunity Council, briefing the Council on the panel's task assignment and, at the second meeting, discussing the issues raised in this report. Throughout this consultation some of the panel members have served as monitors of equal opportunity progress in other organizations in order to feed into NASA the lessons of whatever experience appears relevant.

The panel has met six times to explore the problems inherent in the NASA effort to achieve equal opportunity. These meetings have been accompanied by reviews of the extensive equal opportunity documentation originating both within and outside the agency. Each of the center self-evaluation reports, for example, has been reviewed by at least two panelists. One panel meeting was devoted primarily to a comparative critique of these reports. The center affirmative action plans have also been reviewed. The panel and staff have taken advantage of the opportunity to study numerous reports and statistical data generated

¹ Centers visited were Ames Research Center, Goddard Space Flight Center, John F. Kennedy Space Center and Langley Research Center.

in the Equal Opportunity reporting system and the Personnel Management Information System. The assistance and cooperation of the Equal Opportunity and Personnel Office staff has been extremely helpful, and the panel wishes to express its gratitude to those two staffs and to all other officials in NASA who have facilitated its investigations.

II. Context: The Dimensions and Scope of the EO Challenge in NASA

In view of the voluminous coverage provided from other quarters during the course of its study, the panel has been concerned about how it could contribute to a fuller and deeper understanding of the equal opportunity challenge. It arrived at the view that there were two constructive roles for this panel. One of these was to be concerned with the quality of the management of NASA's EO program in terms of the development and implementation of its objectives. This is in contrast to devoting attention to numerical goals, per se, for women and minority males in NASA. The second role was to look at equal opportunity from the perspective of the agency's overall condition. The panel felt that relatively little would come from examining the issue in isolation from NASA's overall goals and objectives. Nor would much be achieved from going over the same ground covered in the studies which were based mainly on equal opportunity statistics. The data accumulated through all the aforementioned studies have served the panel as a useful point of departure for its investigations. But these data, for the most part, treat the equal opportunity question as a separate issue, not as an integral aspect of NASA's current status and future development. The internal organizational environment in which a program operates, must be assessed to gain a true understanding of the prospects for significant social change. Furthermore, the context of the external bureaucracy in which a program operates has a critical bearing

on its development within an agency. Thus it is necessary to consider the status of equal opportunity in the Federal government system.

A. Dilemma Surrounding Federal Equal Employment Law. Discussion of equal opportunity in the federal service is complicated by a fundamental difference in viewpoint as to what is actually meant by equality of opportunity and affirmative action to achieve that goal. This difference was brought out in hearings held in June 1975 in which Civil Service Commission Chairman Robert Hampton appeared before the House subcommittee on equal opportunities chaired by Representative Augustus Hawkins (California). Hampton defined equal opportunity in terms of personnel decisions based on an individual's ability to do a job without consideration of any other factors. He described equal opportunity as simply the obverse side of the coin of the merit principle. He added that "affirmative action carried out within the context of the merit system has produced an equitable employment system for the Federal Government and it is a system in which minorities and women are continuing to make significant progress."²

Hawkins, on the other hand, presented a very different view of equal opportunity, linking it not just to individual cases but to discrimination against classes or groups of people. In his view affirmative action acknowledges long-standing discrimination against all women and males from certain minority groups and proposes actions to eliminate the results of that discrimination. Hawkins contends that his view corresponds with the intent of Title VII of the Civil Rights Act.

² Statement by Chairman Robert E. Hampton, U.S. Civil Service Commission before Subcommittee on Equal Opportunities Committee on Education and Labor, House of Representatives, June 25, 1975.

This dilemma is not merely an academic or a political issue. Suits instituted are bringing the matter before the courts, and the issues remain unsettled. Recently, the United States Court of Appeals for the Second Circuit stated that racial quotas (goals?) can be imposed only with "reluctance and restraint" even though they are designed to correct for past discrimination against groups. Stress was placed upon the need to preserve civil service procedures for hiring and promoting individuals on the basis of merit determined by competitive examinations for public jobs.³

The argument has been made that "goals" are not "quotas" in that goals represent targets to be achieved rather than specific allocations. In either instance, the possibility arises of charges being made of "reverse discrimination". Certain implications of the respective sides of this dilemma should be noted. With what might be termed the "purist" view, equal opportunity is achieved with a hiring policy that is race-blind and sex-blind. "Qualified" people are employed without the possibility of being discriminated against because of either of these characteristics. This position carries with it no sense of responsibility for an agency to make special efforts to recruit or assist in the preparation of "qualified" minorities or females. It is essentially a passive orientation.

³ Article in the New York Times, "Court Rules Out Racial Job Quota", August 10, 1975. A number of cases testing the affirmative action concept are currently on their way to the Supreme Court. The Court's most recent ruling in the DeFunis vs. Odegaard case failed to provide definitive judicial interpretation of the intent of the law.

This "color blind" approach is considered by minority rights proponents to fall short of recognizing the present effects of past discrimination. This position rests on the argument that unless special efforts are made, the affected classes suffering from past discrimination will not even bother to apply for advanced positions, will not seek training and will not be qualified for assuming higher responsibility. Under these circumstances, equal opportunity would be, in effect, delayed at least for another generation.

In contrast to the "purist" approach the "affirmative action" approach is a more active orientation. Not only is there to be no discrimination in hiring, but explicit efforts are to be made to recruit potential employees among male minorities and females. In addition, programs are developed to assist in the preparation of members of these groups so that they might qualify for jobs. The very establishment of Equal Opportunity programs throughout the federal government would seem to be an official endorsement of the affirmative action approach. If the "purist" approach had been intended, all that would be needed would be a monitoring system designed to detect discrimination in hiring and promotion practices.

B. NASA's Mission and How it Impacts the Equal Opportunity Program. While this panel has been conducting its study, another Academy panel has pointed up the significance of the changing nature of NASA as it becomes increasingly involved in applications and technology utilization programs. That panel made note of the fact that, despite the emphasis placed on this change in statements by NASA's top leadership, there has been too little visible organizational and policy adjustment within the agency to translate this

change into a new forward thrust.⁴

NASA's performance in equal opportunity is inextricably linked to the agency's overall performance, its evolving mission and the state of its well-being. Whatever difficulty NASA encounters in attracting the most qualified women and minority male candidates (as well as all candidates) for the very limited number of openings stems at least in part from the way in which the agency is perceived from the outside. Whether rightly or wrongly, NASA is all too often seen in the eyes of many who are not close to its program areas as an agency whose mission has been accomplished, leaving it now in a declining phase. The important changes in the direction and content of NASA activities do not seem to have been effectively communicated to the public.

The equal opportunity panel concurs with the findings of its companion panel. It will not be possible to attract and retain the much sought-after female and minority male talents required to improve the EO profile unless it can be demonstrated more effectively than it has been to date that NASA is still a viable agency, with a mission relevant to humanity's needs and aspirations. The panel recognizes that past efforts by NASA's senior management to expand the NASA role in these directions have been blocked by Executive Office, and specifically Office of Management and Budget, opposition. Nevertheless, the panel believes that an effective case can and should be made to demonstrate how the NASA capability can be applied to solving humanity's most pressing problems.

⁴ Developing NASA's Future Leaders: An Assessment of Needs and Recommendations for Action, A report of a panel of the National Academy of Public Administration, June 13, 1975; pp. VI - XI.

C. Special Problems for NASA Stemming from Reduced Manpower Ceilings.

The challenge to NASA to improve its record in equal opportunity has come during a time when the agency's work force ceiling has been steadily declining. Reductions in force sustained over a period of nearly ten years, a more extended period of decline than any other Federal agency has ever experienced, have cut back on the opportunities for hiring. During the year beginning June 30, 1974, for example, the total number of NASA employees declined from 24,854 to 24,361. At the peak of the Lunar Program in 1966, total employment was 35,860. Thus, it is apparent that over the past decade there have been periods of reductions in manpower at much steeper rates than during the past year. Even with declining manpower ceilings, of course, some new hiring is necessary. Last year, for example, permanent accessions numbered 1087.⁵

D. Scarcity of Females and Minority Males in the NASA Related Work Force.

Most of the external criticism leveled against NASA has centered on the failure to incorporate more women and minority males in the more highly skilled and and highly paid elements of the work force. The NASA defense against this charge is that few women and minority male candidates are available for this kind of employment either within the agency or from the outside.

The panel acknowledges the special difficulties involved, in an agency focused on highly specialized technologies, in moving any non-technical personnel into technical positions or even into administrative

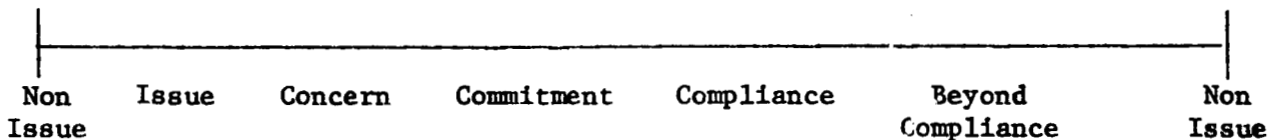
⁵ Personnel Management Information System, Minority Action and Count Report for Fiscal Year 1975.

or professional support positions. The number of females and minority male employees who could make such a major shift must undoubtedly be limited. Furthermore, it is true that, on a national basis, the experienced civilian scientific and engineering work force, as of the latest reliable census in 1972, was composed of only 3.5 percent minorities and 3.4 percent women.⁶ The fact that there is beginning to be some increase in the numbers of minority and women graduates of engineering and scientific educational institutions, though encouraging, does not substantially alter the relatively low proportion of minorities and females in this sector.⁷

III. Strengthening the Current EO Program

The first major aspect of the NASA mandate to the Academy was to seek out ways in which the agency can strengthen its on-going equal opportunity program. To carry out this assignment it was obviously essential to examine and assess all aspects of the program.

A. Assessing Where NASA Stands. One way of charting progress towards a social goal such as equal opportunity is to attempt to rank it on the scale of a continuum like the following:



⁶ "National Aeronautics and Space Administration's Equal Employment Opportunity Program Could Be Improved," Report by the Comptroller General to the Committee on Labor and Public Welfare, U.S. Senate, April 6, 1975, p. 21 (The female component in the minority percentage is not broken out. Female percentages in the engineering workforce are estimated at only about 1.6 percent.)

⁷ A report of the Engineers Joint Council on Women and Minority Engineering Graduates of March 12, 1975 reveals some rise in the three degree levels (BS, MS, PhD) for women and minorities in the years 1972, 1973, and 1974. Women earning the BS increased from 525 to 744, while blacks increased from 579 to 756.

In the past, represented by the left-hand side of the scale, equal opportunity is displayed as a non-issue because it has not even been recognized as a problem. Progress is measured as movement occurs to the right across the scale. The ultimate goal towards which equal opportunity programs are directed is the non-issue point at the far right where the problem has been solved. This point requires an environment in which equality has been achieved, the concept has been internalized as part of regular behavior, and special monitoring is no longer necessary. The equal opportunity staff should be striving to put itself out of business. While that goal may appear to be reaching for the millenium, particularly in light of halting progress to date, it nevertheless should be recognized as the objective. Considering where NASA stood only a few short years ago when equal opportunity became an issue, it is evident that progress has been made. It is difficult to indicate on any definitive or quantitative basis where NASA stands today on this continuum. From center to center there are variations, and there are likewise considerable differences in attitudes between various levels of agency personnel. It is the consensus of the panel, however, that NASA stands at a point between concern and commitment.

The senior administrators of NASA were "concerned" about equal opportunity long before this study was initiated, and the commissioning of this study emphasizes the degree of their concern. But there is a vast difference between concern and commitment. The word "commitment" is often applied rather freely in contemporary usage, without recognition of its full implications. In this study, the panel interprets the word to mean consistent behavior in support of an objective over a sustained period of time. All decisions having a potential to influence the

achievement of that objective are taken on the basis of full consideration of the impact of the decision on advancing toward the objective. Commitment implies long-range strategic planning to make the best possible use of the human and physical resources of the agency in attaining this objective.

NASA's senior administrators undoubtedly believe that they are committed to equal opportunity. They know how much time they devote to equal opportunity related matters. They know that agency resources channeled to equal opportunity are being increased at the same time that NASA's overall budget and manpower are declining. But how they may perceive their position and how they are perceived by others do not always correspond. During its investigations, the panel frequently found that NASA personnel at various levels were asking whether the statements endorsing equal opportunity by top administrators represent real commitment or a more or less pro forma attempt to demonstrate that something is being done. In the absence of a firmer conviction concerning commitment at the top, there remains a tendency to see equal opportunity as a side issue which can be fixed much as a problem in a hardware program can be fixed with some incremental addition of effort. But the physical problems associated with design and engineering of a spacecraft, however difficult in a technical sense, are more susceptible to this kind of fix than problems of human relations. In other words, the problems caused by social inequities inherited from the past are, in many respects, more difficult to resolve than the typical problems associated with achieving the technical goals of a space project.

As noted above, many problems facing NASA in attracting women and minority males are, to an important degree, beyond NASA's competence

to resolve exclusively on its own. The scale of entry level government salaries, in comparison with the private sector, is certainly beyond NASA's control. Moreover, the agency, in fact, has been forced to operate under the constraints of a ten-year period of reduced manpower ceilings as well as ceilings on grade levels.

The panel observed that, while NASA's equal opportunity profile is being improved from a statistical measure, the internal social climate does not seem to be changing as evenly or as surely as might be hoped. From the viewpoint of the women and minority male employees seeking equal opportunity, progress is still seen to be too slow. Among first line supervisors, significant elements have yet to accept the implications of progress towards equal opportunity. On the contrary, there are still elements which perceive equal opportunity as either a diversion away from the agency's primary efforts, potentially harmful to maintenance of NASA technical standards, reverse discrimination, another burdensome intervention on the part of Washington, or some combination of these.

Within the equal opportunity staff at Headquarters and in the field, there is considerable dissatisfaction and a sense that the accomplishments are not commensurate with the level of effort going into the program. Among women and minority males and in the equal opportunity staffs, the panel encountered numerous examples of the view that middle management levels, and particularly first line supervisors, are too inclined to emphasize the obstacles to equal opportunity rather than making adjustments which would facilitate the achievement of equal opportunity. Largely on the basis of these considerations, the panel reached its conclusion that, from an agency-wide point of view, there still remains a considerable way to go before reaching the stage which can be

clearly identified as commitment.

Commitment, as the panel employs the term, implies a willingness to work for change in an environment that imposes constraints on progress towards equal opportunity goals. The environment for the NASA equal opportunity program consists of both an internal and an external set of conditions. While there are important steps that can and should be taken to move NASA's internal administration closer to equal opportunity the internal state cannot be changed sufficiently to realize ultimate goals without concurrent efforts to change the external environment. For example, as noted at other points in this report, the resource pool from which NASA can draw to expand its female and minority male work force will not be adequate unless steps are taken to increase the numbers. Another class of actions to alter the external environment consists of NASA initiatives vis-a-vis other government organizations to remove barriers to change, e.g. Civil Service Commission regulations affecting recruitment, the complaints system, veterans preference, etc.

B. The Statistical Record. For the past few years, since NASA has been concentrating on improving its equal opportunity performance, it has made significant progress in boosting the percentage of women and minority males in its new hires. Of the 1,087 new hires in fiscal year 1975, 294 (27 percent) were minorities while 489 (45 percent) were female. Of the female hires, 162 (14.9 percent) were minorities. While the bulk of the minority and female hiring occurred in the non-professional categories, the percentages of females and minority males hired into professional positions indicated an impressive effort. Of 522 new professional hires, 114 (21.8 percent) were minorities and 111 (21.3 percent) were female. Of the female hires,

29 (or 5.6 percent) were minorities.⁸

These figures would suggest that the agency is making a serious effort to compensate for any past shortcomings in the observation of equal opportunity guidelines. But with such a limited level of new hiring, it will take time to show significant change in the overall composition of the NASA work force.

A survey conducted by the Director of Personnel for the Deputy Administrator in June, 1974 gives data on this matter.⁹ Some interesting comparisons emerged from this study as noted in Table 1. Compared to the government as a whole, NASA is populated by a significantly higher percentage of S and E's and professionals, 61% to 33% respectively. In the scientific and engineering category which represents 45.98 percent of NASA's strength, 3.45 percent were minorities and 2.21 percent were females. Government-wide adjusted statistics showed the scientific and engineering category representing 10.29 percent of employment. Of these scientists and engineers in all other agencies, 5.29 percent were minorities and 2.58 percent were females. On the other hand, in the category of professional administrative employees, other government agencies have a higher percentage of employees than NASA, 22.62 percent vs. 14.25 percent, respectively. In this category, the other agencies have 11.06 percent minority and 22.51 percent female, while the comparable figures for NASA are only 4.10 percent and 15.60 percent. These data indicate that, given special EO problems with scientists and engineers, the area where NASA's record

⁸ Personnel Management Information System Report, Minority Action Count Report for fiscal year 1975.

⁹ Memorandum to: AD/Deputy Administrator from JP/Director of Personnel, Subject: Additional Information on NASA EEO Ratios, June 20, 1974. The data reported in this survey are as of June 30, 1973, but no significant changes to alter comparisons have occurred subsequently.

Comparison of Occupational Categories *

Government vs. NASA, as of June 30, 1973

<u>Job Category</u>	<u>Government Wide **</u>			<u>NASA</u>		
	% of Total Employment			% of Total Employment		
Scientists and Engineers	10.29			45.98		
	% Minority	5.29		% Minority	3.45	
	% Female	2.58		% Female	2.21	
Professional Administrative	22.62			14.65		
	% of Total Employment			% of Total Employment		
	% Minority	11.06		% Minority	4.10	
	% Female	22.51		% Female	15.60	

* Data from tables attached to Director of Personnel Memo of June 20, 1974.

** Government wide data adjusted to reflect analogous NASA occupational categories.

TABLE 1

ORIGINAL PAGE IS
OF POOR QUALITY

compares most unfavorably with other agencies is in the professional administrative category.

Unless these data are put in the proper context, there is danger that NASA may be compared unfairly with other agencies. The fact is that, if it were possible (which it is not) to break out the scientist and engineer category into scientists and engineers, NASA would probably compare quite favorably with the rest of the government in the engineering category. As for the professional administrative category, it is fair to point out that, because NASA is such a technologically oriented agency, even those holding professional administrative positions must, in many cases, have scientific or engineering backgrounds. Therefore, even these ranks are not likely to yield as much room for minority male and female advancement as might be the case in other agencies.

The Affirmative Action Plan for fiscal 1976 presents some ambitious goals for professional hiring of women and minority males in the next fiscal year -- 23.8 percent and 16.3 percent, respectively. Presumably an effort will be made to maximize the scientist and engineers category among these professionals. The AAP also calls for several upward mobility programs designed to increase the female and minority male composition of the scientists and engineers and professional-administrative work force.

The AAP set out as an objective for the coming year the establishing of numerical goals and timetables for the placement of females and minority males in professional positions, but it did not indicate what guidelines should govern the establishment of those goals. In fact, it is difficult to ascertain just what principles and considerations enter into the setting of EO goals in NASA.

Any realistic assessment of the "numbers" aspect of NASA's EO program would discount those women and minority males employed explicitly in the EO program. This would apply both to numbers of individuals employed and the grade levels. For NASA, as with any organization, a fair evaluation of progress in equal opportunity would disallow the skewing that stems from including EO personnel in the count of women and minority males.

C. Dynamics of the Equal Opportunity Process. In all areas of administration it has come to be recognized that process is an important element of the achievement of program goals. How things are done and who is involved in doing them are sometimes as important as what is done. The panel sought to discover not only what NASA is doing to implement an equal opportunity program, but how the dynamics of the process are working to affect the climate in which the equal opportunity program operates.

The panel's concerns relative to the dynamics of the process of equal opportunity within NASA can be summarized as follows:

1. Equal opportunity is perceived by the ranking officials in NASA, and the same would have to be said for the vast majority of other organizations, as a more or less self-contained package of problems. The solutions to these problems are all perceived to bear an equal opportunity label of some kind. Solving the problems tends to be regarded as a costly exercise, with the costs measured in time and dollars "diverted" from other programs central to the purpose of the agency. Few, if any, administrators have come to a totally different view, one which looks on these human resource issues not as problems but as opportunities. By correcting the inequities in race and sex relationships which have existed in the past it is possible to upgrade and improve the entire

process of managing human resources. Many of the inequalities that need to be corrected affect majority males as well as women and minority males. The near absence of programs for management development, the inadequacy of communications between the decision-makers and those who are affected by the decisions, the dehumanization of the bureaucratic process -- these are all problems which refuse to be pigeonholed in an "equal opportunity" box. Face up to and deal with these problems and an agency stands to gain not only an improved equal opportunity profile but a work force with a higher morale, an increased dedication and a higher standard of performance.

2. Although the level of consciousness among NASA managers has been raised with respect to personnel decisions involving equal opportunity, there still remains a tendency to think of equal opportunity spasmodically. When a problem such as pending complaint arises, or when a report pertaining to an equal opportunity matter comes due, a manager thinks of the issue. But these are special occasions outside the normal realm of concern.

3. The equal opportunity staff tends to be made up predominately of women and minority males. They operate almost exclusively in their special field and they are perceived by others as specialists, not part of an integrated administrative process. Equal opportunity offices, in Headquarters and in field, tend to become minority enclaves. Equal opportunity may be perceived by those outside the program as the only kind of activity in which women and minority males can occupy themselves. Care must be taken to avoid a situation characteristic of many government agencies in which equal opportunity programs become the main vehicle for advancing women and minority males up the grade ladder.

In an agency such as NASA, with its heavy emphasis on administrative processes and management technique, there is some danger that a functional program such as equal opportunity can become a victim of administrative overkill. Just as administration can be too loose or too lean, so can it be too rigid or over staffed. Too much administration, too much reporting and gathering of statistical data, too many meetings and committee activities can interfere with the achievement of real progress, becoming ends in themselves rather than means to ends. Such forms of endeavor take on the characteristics of "busy work."

Finally, in commenting on the dynamics of the process, some attention needs to be given to the conflict and tension inherent in this struggle for a social goal. As those who work in this field know well, equal opportunity is a dangerous and frustrating career path. As one interviewee said at a field center, "It's easy to get fired working in this field." Equal opportunity officials in the field and other management representatives involved in equal opportunity matters are constantly being faced with hard choices. Sometimes it may seem easier to avoid the difficult decision, to seek a compromise, to keep the conflict level low.

The idea of tension and conflict is certainly nothing new in the NASA style of management. In fact structured tension is a recognized feature of a system which includes program management, institutional management, and functional management. These several lines of authority are inevitably competitive with each other to some degree. Moreover, there is competition between the centers each of which operates with a high degree of autonomy. If this kind of structured tension is accepted

as part of the NASA way of doing things, what about another kind of tension in the area of equal opportunity? Does the leadership of NASA at all levels and in all program areas fully recognize the significance of introducing another source of tension in the agency and the necessity of sustaining that tension for the achievement of social equity?

D. Definition of Roles. The administration and management of the equal opportunity program in NASA should be compatible with the organizational structure and administrative processes of the agency. One of the principal features of NASA organization is its decentralized structure in which the field centers operate with a high degree of autonomy. The Equal Opportunity functions in the centers, like every other non-line activity except audit and inspections, are a responsibility of center management. The Assistant Administrator for Equal Opportunity has no line management control but performs essentially a monitoring role with respect to the equal opportunity function in the field.

The panel regards this structural relationship as entirely natural and appropriate. Only through such a structure can accountability for equal opportunity be vested in the chain of line management where it belongs. Any attempt to centralize equal opportunity at Headquarters would be counterproductive, in that it would obscure line management accountability. Moreover such a move would set up various kinds of institutional resistance as a deviation from the norm in the NASA structure.

Within this basic structural framework, however, there is a real need for defining the roles of the several parts of the agency that have an involvement in equal opportunity. The lines of accountability and responsibility for the achievement of equal opportunity in

NASA seem not to be well defined or well understood. The equal opportunity function in NASA has become a complex array of roles and responsibilities including advocating, advising, monitoring, supporting, and managing various programs. Under law the Equal Opportunity staff are designated to advise and assist the agency head and the line management.¹⁰ Nominally, the agency head is accountable and responsible for assuring that line management, supported by Personnel Office staff, operates according to equal opportunity law. But the Equal Opportunity office is also required to operate certain programs such as the Federal Womens Program, the Federal Contract Compliance Program and the Spanish-speaking program. In some instances, moreover, equal opportunity offices have taken over operational responsibilities through default of other elements.

In practice, what has happened in NASA is the evolution of the EO role from a purely advisory or staff function into a partly operational role. The EO staff members are increasingly engaged in conducting programs, some of which go beyond those specifically mandated in the law. By becoming engaged in a multitude of activities, the appearance is given that line management's responsibility and accountability for equal opportunity are being partially transferred to or shared with the equal opportunity staff. Such fuzzing up of lines of authority is fraught with risk. It takes away from the line manager's awareness that he or she is ultimately responsible for achieving equal opportunity within his or her unit. Conversely, it weakens the role of the staff function as auditor, monitor, advisor, facilitator or critic.

¹⁰ U.S. Code, Title 5, Administrative Personnel, Part 713, Equal Opportuntiy and Executive Order 11478, Equal Employment Opportunity in Federal Government, April 23, 1971.

The EO staff, despite its expansion over recent years, remains small in comparison with personnel office staff. There is no way that EO staff, on their own, can make equal opportunity happen. Yet, with the present confusion regarding roles, there is a tendency for many people to think first of the EO staff as being responsible for achieving NASA's EO goals.

Clarification of respective roles and responsibilities as between line management, personnel and equal opportunity staffs, is a prerequisite to any serious effort to strengthen the NASA EO program and to increase the prospects for forward movement. Such clarification could lead to a decision to retain the present basic division of responsibilities, while sharpening the perception of the line-staff relationship. Alternatively, it might be decided that too much operational and program type activity has been given to the equal opportunity staff. Some of these functions, it may be felt, should be reassigned to personnel. If personnel should be asked to assume new responsibility, it would have to be given the staff resources needed to fulfill that responsibility.

The panel believes that as a minimum, NASA should try to sharpen the delineation of the lines of responsibility and accountability among line management, personnel and EO staff. In the process of examining roles and responsibilities, moreover, full consideration should be given to the importance of preserving the basic character of the staff function, keeping it unencumbered with program or operational responsibilities.

In considering how to sharpen or redefine roles and responsibilities, attention should be focused on what a functional office can properly be expected to do. Functional offices are intended to support line management, both program and institutional elements. Functional offices develop and

advise line management on alternatives for action, programs, and operations to meet the legislative, regulatory or professional standards underlying the functional area, whether it be procurement, equal opportunity, personnel or other activity.

In order for functional offices to have an effective working relationship with and a positive impact on line management, the representatives of the functional office must be closely attuned to what is going on in the line. Unless functional offices have a realistic understanding of what line management is thinking and doing, they will not be able to provide realistic advice and support. A question the panel would raise for consideration by all concerned is how well do EO staffs understand the true nature of the line environment. A question which flows from this is what is line management doing to educate and inform EO staff on the significant activities of the line.

E. Communications and Reporting. The adequacy of communications represents a critical aspect of program administration. Information should flow regularly and freely upwards, downwards and laterally. Communication must be maintained effectively, both within all the elements of a functional office and between that office and the key points in the matrix organization in which it operates.

Formal reporting of NASA equal opportunity activity in terms of statistical data would appear to be adequate for the needs of the program managers. The inclusion of equal opportunity data in the monthly NASA Personnel Management Information System provides detailed and current information concerning minorities and women in the workforce. Equal opportunity offices at the centers have reported until recently on a quarterly basis to Headquarters highlighting EO developments and progress

towards goals. This report format is being revised and the report is currently suspended pending that revision.

The Equal Opportunity Council meets roughly every two or three months, providing a forum for discussion of problems involving the center deputy director level. The regular reporting on equal opportunity at the General Management Review brings equal opportunity matters before the agency's top management on a monthly basis.

The foregoing summary covers only internal NASA reporting. An additional reporting requirement is laid on the agency by the Senate appropriations sub-committee which calls for quarterly reports, the preparation of which is time-consuming and expensive in terms of special computer runs. The Civil Service Commission requires additional reporting, also according to its format. It would seem apparent that too much time must be spent on reporting to various overseers, but there is little prospect of reconciling the reporting formats of the Commission and the Congress.

The adequacy of an organization's information flow depends only in part on formal reporting systems. At least as important as formal systems are the informal working relationships among all those concerned with assuring the success of a program. The panel found that despite the large volume of reports and statistical data being generated and the attention to equal opportunity at meetings held on many levels there are still communication failures. These failures stem in large measure from the conditions mentioned above in the section on Dynamics of the Equal Opportunity Process. It is an uphill battle for a program oriented towards social change to win attention in an agency whose management is oriented to technology. While there is no reason to believe that scientists, engineers or technicians are necessarily more racist or sexist than other

groups in society, they do become so caught up in their areas of specialization that social concerns tend to be forced into the background. This helps to explain why there is such a wide gulf separating the line management of NASA from the equal opportunity staff. Another reason for the gulf is that very few, if any, equal opportunity staff persons understand the technical program of NASA sufficiently to play a full role in the critical areas of decision-making which are technically focused.

To develop the female and minority male work force components capable of taking their place in the mainstream of NASA activity in the years ahead, it is obviously necessary for the Equal Opportunity staff to know the kinds of professional and administrative talents that will be needed. What will NASA look like ten to twenty years in the future? What kinds of education and training will be needed for those who staff the agency? These are questions on which the EO staff receives scant guidance. The time has long since passed for thinking about the future in discrete categories which separate the setting of goals for space and aeronautics technology from goal setting for human development. The "Outlook for Space" is a recent example of a forward planning effort which looked exclusively at future options for technical projects without any consideration of the need for involving minority men or women or the issue of equal opportunity.

A second communications gap has existed for some time within the equal opportunity office at Headquarters between the Assistant Administrator and the staff members of the office. Some of this communications gap can probably be attributed to the discontinuity in the transition of leadership, some to the inter-office conflicts tracing back to the earlier administration, and some to the fact that the present Assistant Administrator

has until recently lacked a deputy or any division directors. The span of control has been too broad to permit good communications or effective management. It is to be hoped that the designation of a deputy and three division directors (for internal and external programs and EO complaints) will help to improve the flow of communications and the overall efficiency of the Headquarters office. A potential danger lurks, however, whenever new levels of authority are introduced into existing structures. A new hierarchy can become an obstacle to communication. This is a danger to be avoided at all costs and for which all members of the EO staff should be on the alert.

A third communications gap exists between the Washington EO office and the field, and from center to center. This gap stems partly from the structure of the equal opportunity function and the fact that each center operates with a high degree of autonomy. Under these circumstances there is no assurance that all those who are working on equal opportunity are well informed on what their counterparts are doing. Some kind of information distribution mechanism is needed to accomodate a growing staff activity with policy guidelines in a state of flux, rapid change in staffing assignments, and a diversity of programs being conducted in more than a dozen different field locations.

For quite a while consideration has been given to various kinds of newsletters. While recognizing that newsletters tend to proliferate beyond the absorptive capacity of potential readers and that it is hard to sustain reader interest, the panel nevertheless sees some value in this technique. But, because there are a number of different audiences with varying degrees of interest, it would not be feasible to expect one newsletter to serve all information needs. Different communications devices should be employed to serve EO specialists, NASA employees,

line managers and supervisors and the general public. A news service run out of the Washington EO office could serve all three.

F. Equal Opportunity Complaints System. The complaint system in effect in NASA is prescribed by Title 5 of the U.S. Code and by Executive Order. It would be difficult to devise a more complicated, cumbersome and time-consuming means of hearing complaints and processing them through to resolution. The difficulty of making the system work discourages employees with grievances from using the formal channel. If the system operated at maximum effectiveness, relief could be expected within six months or so, whereas in practice the average time is closer to a year. Nevertheless the number of individual complaints filed during fiscal year 1974 increased to 54 from a level of 35 in the preceding year. The majority of the complaints were filed on the basis of race or color and sex, with age, national origin and religion being cited less frequently. The AAP, in noting this escalation, calls for an assessment of the work climate of the agency to determine the underlying causes for this increase.

There are, perhaps, two ways of reading the significance of an increase in complaints. On the negative side, it suggests that more individuals are dissatisfied with what they perceive as discrimination against them. On the positive side, it suggests that employees are being sensitized to their rights. People are prepared to make the effort to obtain corrective action despite the prolonged and disruptive nature of the process. Even if there is redeeming value in the stimulation of EO awareness, it is hardly consoling to see a rise in the incidence of formal complaints. Because of this increase, the time required for processing the average complaint has stretched out even further than in previous years, involving heavy commitment of managerial resources in the labyrinthian process of review.

In assessing the climate that induces an increase in formal complaints it may be well to pay heed to some comments on the part of several individuals at Headquarters and the field responsible for administering the complaint process. In their view, a major source of complaints is an inadequate effort to advertise vacancies and to promote from within.

Reference has been made above to the need for informing Headquarters Equal Opportunity of high level vacancies. The recently adopted practice of advertising agency-wide all positions of GS-14 and above is a step in the right direction. With respect to openings at middle or lower ranges, the problem exists mainly at the center level. Standard practice at the centers is to post advertisements of vacancies on bulletin boards at locations where most of the specified type of talent is concentrated. Individuals in other locations may not see these notices, and vacancies are left open for only five days. Canvassing of internal skills availability is limited. The Personnel Management Information System (PMIS) does not provide sufficient detail to be used for this purpose. The maintenance of a skills bank or roster, a suggestion advanced on occasion, would be a costly and burdensome device. In the final analysis, progress in bringing minorities and women up the ladder through internal promotions will depend on the motivation of management at all levels. This means that no level of management can be content with making the right noises and passing the responsibility down to the next lower level.

Another cause for complaints concerns discrimination in selection for training opportunities. Some first line supervisors are reported to be unwilling to release secretarial and clerical help to attend training courses for other than secretarial and clerical skills. Civil Service guidelines indicate, however, that training opportunities should be

provided as long as the skills acquired could benefit the agency. As for some of the more high-level training programs at the graduate university level, it is often argued that more women and minorities could be given such a chance for self-improvement.

The legal aspects of the formal complaints system pose heavy demands on NASA's legal staff and on the OEOP which has no staff lawyer. All the lawyers in the General Counsel's office are available to OEOP for consultation and assistance, and one lawyer has been designated to provide special assistance. For the moment at least, this arrangement appears to be working sufficiently well to be maintained as it is.

G. Equal Opportunity Counseling Program. One of the best ways to cut down on the number of formal EO complaints filed under the system discussed above is to settle as many disputes as possible through informal counseling and negotiation. NASA has established a network consisting of 77 counselors distributed throughout the agency, exceeding by a good deal the CSC recommended ratio of 500 employees per counselor. A survey of the effectiveness of the counseling program was conducted as part of the agency EO self-evaluation.¹¹

Generally favorable responses to the counseling program were received from the three elements of the survey sample having the closest first-hand familiarity with the system. These three elements were the employees who had made use of the system, management personnel and the counselors themselves. The expressions of positive feelings about the program have increased since the last inquiry conducted by the Civil

¹¹ Report on Assessment of NASA's Equal Employment Opportunity Counseling Program (undated).

Service Commission in 1973. The latest survey drew the conclusion that counselors are considered very effective in seeking solutions to EO problems.

Not surprisingly, however, some respondents expressed negative views, finding fault with various aspects of the counseling process. Some of the criticisms cited were: limited credibility of the counseling program, lack of management commitment and the need for additional training. These criticisms suggest that there are still employees who do not seek redress of discrimination-based grievances in the belief that the system will not work for them. The results of the above-mentioned survey to the contrary notwithstanding, there was evidence at all of the field centers visited by the panel of a fairly widespread lack of confidence at grass roots levels in either the counseling system or the complaints system as a means of redressing discriminatory treatment.

Complaints of reverse discrimination are surfacing in both the counseling program and the formal complaint process. There are indications that some elements of the white male work force view equal opportunity as a form of reverse discrimination. It would seem highly likely that such complaints will continue to increase as the female and minority male components of the workforce grow. Certainly one of the most difficult areas of decision-making in the equal opportunity field is to draw that fine line which distinguishes an aggressive equal opportunity program from one which discriminates against males and non-minorities.

H. Equal Opportunity and Personnel Administration. Movement towards equal opportunity is highly dependent on effective collaboration between personnel offices and equal opportunity offices at all levels of organization. There is one school of thought which holds that EO is best

assured if it is integrated within the personnel function. A few agencies, including the Department of Commerce, have achieved some success by retaining EO within the personnel office, although this runs counter to the Civil Service guidelines. The argument for this integration contends that EO officers will learn more about personnel and be more effective in promoting EO if they are in the personnel system. They are closer to being in the agency mainstream and less subject to the risks of being an institutional and social enclave. Conversely, personnel officers will become more EO-oriented by working more closely with EO specialists on a daily basis.

In the panel's view, however, the weight of evidence remains on the side of the Civil Service instruction providing that Equal Opportunity should be a separate function reporting directly to the head of the agency. Whenever NASA should arrive at that golden era when equal opportunity has been achieved, the responsibility for maintaining the EO watch can be transferred to personnel. That day is too far in the future to warrant consideration now. It will arrive only when equal opportunity has become an ingrained institutional responsibility of all NASA management, both line and staff; and all the irrelevant barriers have been removed, assuring truly open access to all of the job market. In the meanwhile, personnel policy and procedures deserve close scrutiny, as they represent the main arena in which the equal opportunity struggle is waged.

The panel has observed a good working relationship between personnel offices and equal opportunity offices at Headquarters and in the field. Reporting systems established by the personnel office, in particular the PMIS system, permit up to date tracking of data on

minorities and females in the work force. Personnel offices have taken the initiative or helped the equal opportunity offices in developing a number of programs to speed progress towards equal opportunity.

Nevertheless, bottlenecks remain in a number of personnel policy areas. NASA has yet to achieve a personnel profile approaching an acceptable level of female and minority male representation. One of the most serious shortcomings in equal opportunity performances on the part of the agency personnel staff is the failure to achieve higher ratios of minority males and females within a number of center personnel offices.

The following discussion highlights some of the more important positive and negative aspects of personnel policy with respect to equal opportunity.

1. Supervisor Evaluation. The importance of evaluating supervisors for their equal opportunity performance is widely recognized as a device for moving towards equal opportunity. A requirement for including EO in supervisors' evaluations was contained in the NASA Affirmative Action Plan for calendar year 1974.¹² But nearly 18 months later, when the AAP for fiscal year 1976 was issued, that document stated: "Processes for holding middle management accountable for day-to-day implementation of the EO program are not uniformly effective throughout the agency."¹³ Installation directors were again called on to "Motivate, raise awareness level, and hold accountable subordinate supervisors for the attainment of EO goals..."¹⁴

¹² Affirmative Action Plan, Equal Employment Opportunity, for Calendar Year 1974, National Aeronautics and Space Administration, Washington, D.C., January 25, 1974, p. 43.

¹³ Affirmative Action Plan, 1976, Op. cit., p. 50.

¹⁴ Ibid., p. 50.

There are several explanations for the slippage in fulfilling the requirement in the earlier AAP. In the first place, the preparation of supervisors' evaluations has been a somewhat neglected area of administration in the agency as a whole. Each center follows more or less its own procedures. As might be expected in a technical agency, technical performance is watched closely while administrative performance usually receives far less attention, if any at all. EO is not considered an important criterion.

Judgments vary from center to center as to whether evaluations should be documented formally by means of a standard form or left to an informal exchange between employee and supervisor, as in the Work Planning and Progress Review (WPPR) system. WPPR, as it has been implemented in NASA up to the present, calls for no written record. It can be argued that the informal WPPR approach holds more promise for meaningful interchange on job and related matters between employee and supervisor than the formality of filling out a form to be entered in a personnel folder. Even if there is a place on such a form for evaluating EO performance, superiors may not take seriously this aspect of a subordinate's conduct. Moreover, since there are so few opportunities for promotion, many supervisors tend to discount the importance of their evaluations.

Under the Civil Service system for instep salary increases, those increases have become virtually automatic, even though they may not have been intended to be so when the system was set up. In order to prevent an instep increase, a supervisor must shoulder the burden of proof if, for example, he wanted to penalize a subordinate for inadequate equal opportunity conduct. No such action has ever been

taken in NASA, and there appears to be little or no leverage here for advancing equal opportunity.

Once again, the problem is one in which NASA's latitude is limited. The real flaw rests in a system which grants salary increases on a negative basis, if an employee's record contains no negative information, rather than on a positive basis, rewarding above average performance.

2. Feeder Programs. Over the years, the centers have employed a considerable range of innovative feeder programs for channeling promising candidates into the agency. These are being used with good effect to attract females and minority males. Female and minority male enrollment in the Cooperative Education Program increased from 18.3 percent (133) and 12.6 percent (92) respectively in mid 1973 to 22.4 percent (194) and 16.7 percent (145) by the end of March, 1974.

A National Aerospace Fellowship Program, started in March 1974, has built up to a present total of 50 junior and senior college students in engineering and science courses who spend two working summers at NASA installations. Of the 50, 43 are minority and 17 female. A federal junior scholarship program of 30 students operates for the Washington metropolitan area at Goddard Space Flight Center. Similar college-based programs are conducted by most of the field centers.

Recognizing that the motivation for entering into careers in science and engineering has to be developed at the pre-college level, several centers have developed feeder programs with local schools, going down to the junior high school level. These programs are indispensable in attracting minorities and females into any type of scientific or technical enterprise and deserve full support not only within NASA

but from all government agencies concerned with equal opportunity in education.

3. Recruiting. As might be expected in such a highly decentralized agency, there are wide differences from center to center in the level of effort and the effectiveness of recruiting designed to improve the equal opportunity profile. There appears to be a good deal of unproductive activity in recruiting visits to educational institutions. Too little advance preparation or too few potential candidates to warrant the visit have both been factors in limiting returns.

The formation of the Equal Opportunity Professional recruiting office in the headquarters Office of Personnel has been a positive step towards coordinating and rationalizing the overall recruiting effort. An effective tool produced by this office is the report produced in the late summer of 1975 on the recruiting universe for female and minority male professionals.¹⁵ The existence of this office as a clearinghouse and referral point for all the centers should help to assure better informed and more productive recruiting throughout the agency.

Efforts to improve NASA's EO profile through recruiting should certainly not be confined to the entry level professionals. Important gains can be scored at both higher levels and in the non-professional categories. There is probably no more effective way of promoting a favorable environment for equal opportunity than by placing minorities

¹⁵ "An Analysis of the Recruiting Universe for Female/Minority Candidates for NASA Professional Occupations," report prepared in the NASA Headquarters Office of Personnel Equal Opportunity Professional recruiting office.

and women in leadership positions. By their very presence, they create pressures for EO and foster a favorable atmosphere for equalizing the mix of the work force. Only on one occasion when NASA has gone outside to recruit for a high managerial post has it located a minority candidate, outside of the equal opportunity function itself. In fact, the Equal Opportunity office has not been consulted on such moves. This oversight needs to be corrected. The panel endorses the AAP proposal to include minorities and females among the shuttle crew members.

At the other end of the recruiting spectrum, a significant part of the problem lies in non-professional and non-supervisory categories where the bulk of NASA openings have occurred under the stringent grade level ceilings imposed on the agency. One of the major impediments to hiring minorities at whatever level is the limited number of such candidates appearing on the CSC registers. While some NASA centers have direct hire authority for entry level engineering positions, all other GS and wage board positions are filled by indirect hiring from the registers, by transfers or by persons with re-employment rights. Some centers have gone to great lengths to encourage minority representation on the registers relying on volunteer help from center employees in the local communities. The GAO report calls for the Commission and NASA to identify the basic causes of the problem with the registers and take whatever measures are necessary to deal with it.¹⁶ In the panel's view this represents a critical area for remedial action.

4. Building the Resource Pool. It is obvious that equal opportunity is not going to be achieved, either in NASA or in any

¹⁶ GAO report, Op. cit., p. 24.

other advanced technology organization, until the resource pool for hiring of females and minority males is substantially increased. It is equally obvious that no single agency has the capability to effect significant change in the size of the resource pool. Only a combined and coordinated effort, involving the participation of government and the private sector, can bring about a major shift in the make-up of enrollment in the nation's technical institutions.

Although NASA has worked extensively with educational institutions in many different programs designed to increase the resource pool, it has done so primarily on its own, without joining in the kind of collaborative effort needed to make a real impact.

The panel believes that NASA should become far more actively involved with and play a leadership role in such a collaborative effort. The Committee on Minorities in Engineering represents the best vehicle, and NASA should increase its participation in the Committee's work.

5. Upward Mobility. In addition to external recruiting, equal opportunity programs must provide fully for upward mobility. Given the admitted difficulty of providing upward mobility for non-technical personnel in a technical organization, there are nonetheless a number of ways in which the prospects of females and minority males for advancement can be improved. During 1974, all NASA installations implemented at least one of three NASA nation-wide upward mobility training agreements approved by the Civil Service Commission. Every installation has upward mobility training available for its employees. Of a total of 734 employees participating in this training in calendar '74, 299 were non-minority females, 103 were minority females, but only 23 were non-minority males.

Training programs are of little value, or even of negative value, unless they lead to career advancement for those who successfully complete the training. During fiscal year 1975 there were a total of 3,090 promotions in NASA of which 400 or 12.9 percent were awarded to minorities and 1,080 or 35 percent went to females of whom 194 were minorities. These figures represent considerable gain over the previous year.¹⁷

An examination of the breakdown of these figures between professional and non-professional categories, as shown below, reveals that women and minority men are still receiving a small share of promotions in the upper levels. These figures reinforce the view that, despite all the effort being devoted in various areas of personnel activity, the rate of internal change in the status of women, particularly minority women, and minority men is still quite gradual.

While all of the personnel programs seem to be steps in the right direction, the question that must be addressed is whether they, together with all the other equal opportunity activity in the agency, represent a comprehensive and systematic approach to change under a considered management strategy. That is the question addressed in the final section of this report.

¹⁷ The breakdown of these promotion figures for professional and non-professional positions is shown below.

	Professional	Non-professional
Total promotions	1404	1686
non-minority male	1073 (76.4%)	731 (43.4%)
non-minority female	211 (15.0%)	675 (40.0%)
minority male	90 (6.4%)	116 (6.9%)
minority female	30 (2.1%)	164 (9.7%)

I. Minority Business Enterprise. Responsibility for NASA contracting with minority business firms falls under the procurement office and, specifically, the Small Business Advisor of that office. Within the Headquarters Office of Equal Opportunity there is also a staff member who specializes in minority business and construction compliance. In the past, there has been some question as to how far the EO office should go in exercising operational control over this function. Now it appears to be recognized that the EO office should serve strictly in a monitoring capacity and as a facilitator and advisor.

In fiscal year 1975, NASA's total minority business awards amounted to nearly \$28 million out of \$2.3 billion in contracts. In 1970, it should be noted, minority business awards totalled only \$77,000.¹⁸ It should also be noted that the vast bulk of NASA contracting is beyond the capacity of minority firms to bid. Most other government agencies contract for goods and services requiring a lower order of technical capability. This fact needs to be taken into account in considering that NASA ranks in a low to medium position among other civilian agencies in percentage of awards to minority business.

The difficulties facing NASA in contracting with firms owned and operated by women or minorities are comparable to difficulties encountered in the employment field. Relatively few such firms have the sophisticated technical competence to participate in space and aeronautics programs. In fact, of the \$28 million in last year's minority contracts, \$13 million was awarded under Section 8 (a) of the Small Business Administration procurement authority which provides a preferential

¹⁸ Summary Report of NASA's Minority Business Enterprise Program, prepared by Small Business Advisor, Office of Procurement, undated.

non-competitive status for small businesses.

In July of 1974 each of the centers established Minority Business Enterprise Councils under the Chairmanship of the center deputy directors. Although these councils may project a good image as an indication of intent, their real value has yet to be established. The evaluation of their effectiveness that has been planned for some time should be initiated without further delay.

The greatest opportunity for increasing minority business awards is thought to lie in subcontracting; since very few minority firms have the capability to serve in the prime contractor role. Because NASA is so heavily reliant on contracting for accomplishing its mission, it must, by necessity, look to its contractors to promote minority business. In the RFP for the shuttle prime contract, for example, it was specified that some preference would be given to proposals having good plans for minority business subcontracting. A laudable innovation in Phase Two of the contract was the requirement for 20% subcontracting with minority firms. However, the effort to bring more female and minority male firms into subcontractor roles should not be seen as a substitute for continuing emphasis on increasing the ratio of prime contracts with such firms.

Last year a new series of technology transfer seminars was initiated jointly by NASA's Equal Opportunity office, the Technology Utilization Office and the Office of Minority Business Enterprise of the Department of Commerce. The seminars are intended to give minority businessmen a familiarity with the potential for new business ventures based on NASA technology spin-off. Attendees are afforded opportunity to access the data base of the several Industrial Applications centers.

Bringing minority business into a position to compete in such advanced fields is undoubtedly a long-term proposition, and it would be unwise to expect too much too soon. Nevertheless the effort deserves sustained support.

J. Contract Compliance. While the Office of Equal Opportunity Program responsibility for minority business is one of monitoring and advising only, the Office has a program management responsibility for contract compliance. NASA's equal opportunity staff determines whether prospective NASA construction contractors are awardable from an EO standpoint. They conduct the reviews of the construction contractors to assure that they comply with Executive order, it's implementing regulations and Office of Federal Contract Compliance, (OFCC) approved bid conditions.

The effectiveness of construction review activity is limited in several ways. A major problem has been the lack of specific guidance from OFCC in the construction compliance program, and particularly with regard to construction outside of metropolitan areas operating under a compliance plan. Such metropolitan plans are either drawn up and agreed on locally (home town) or, failing local agreement, imposed by OFCC. But nearly half of the NASA centers are located in areas not covered by such plans, and there are no adequate guidelines for compliance in these areas.¹⁹

Further, OFCC provides no training for compliance officers to help in dealing with complex and highly controversial issues that arise in reviewing contractor compliance.

¹⁹ Kennedy Space Center is the only NASA center in a non-plan area to develop its own plan for contract compliance. That plan is now under review by the OFCC which is considering adopting it as a model for the areas of the country not covered by a metropolitan regional plan.

An internal problem for NASA in contract compliance stems from the small number of staff people assigned to this responsibility. The contract compliance staff and budget were greatly reduced when the contract compliance responsibility for service and supply industries was taken from NASA last year. Although new construction has been cut back in many centers, it has by no means been eliminated. The dollar and manpower resources for compliance review activity, however, are very limited.

What is needed in NASA, particularly for those centers which fall outside of the metropolitan regions covered by a compliance plan, is a set of agency-wide guidelines. Pending the development of an OFCC national plan, interim procedures need to be developed by OEOP in conjunction with the center.

K. Community Relations. The problem of creating and maintaining an identification of minority interests with the program activity of NASA exists both at the national and local community levels. The problem at the national level was mentioned above and will be further discussed in the concluding section of this report. It should be apparent that a major part of the equal opportunity challenge is tied up with the NASA image among minorities in the communities where NASA operates. NASA employees represent one of the main challenges for projecting that image into the community. Agency public affairs and information programs are an important vehicle for communicating the messages that NASA wishes to convey. Programs conducted in the local school systems are a major feeder of lower entry personnel into the NASA work force. Still another channel to local communities, as noted in the preceding section, is minority business.

The panel agrees with the assessment in the current Affirmative Action Plan that "A communication gap exists between NASA and a large segment of the minority and female communities."¹⁹ NASA does not seem "relevant" to many members of minority communities, and it will not be easy to effect a change in attitudes. But a number of programs now under way are designed to move in the direction of closing this gap. These include the motivational career film being developed by Bill Cosby to promote science and engineering as career choices by minorities and women, the symposia to be held in minority colleges following the format of the Shaw symposium held last spring, and a career awareness institute being held in Baltimore public schools under contract with the National Technical Association.

The community relations program headed up within the Office of Equal Opportunity has interests which bear closely on those of the NASA Public Affairs office and especially the Deputy Assistant Administrator for Community and Human Relations. The interface between these two offices has never been clearly defined, however, and there appears to be a need to bring the two together in a more effective working relationship.

L. The NASA Equal Opportunity Self-Evaluation. The self-evaluation conducted at the beginning of this calendar year called for a heavy investment of both manpower and dollar resources in a critical assessment of equal opportunity in the agency as a whole and at each of the field centers. As the panel examined the reports coming out of this process, it was interested in ascertaining whether the results achieved would be commensurate with the substantial amounts of time spent at all levels of management, the extensive participation of employees forming the constituent groups, and the voluminous paper work and reporting. The finding of the panel based on its study of all the self-

evaluation reports was that the effort was well worthwhile and, indeed, indispensable to a full-scale attack on equal opportunity problems.

Several benefits flow from this process. First, an agency-wide exercise of this nature helps to stimulate an awareness of equal opportunity. Even if greater awareness leads to more complaint activity or more outward signs of tension or friction, the goal of equal opportunity is still being served. Secondly, the process is a visible indication of top management commitment and a willingness to expose their administration to the kind of criticism likely to emerge. The opening up of the system, in itself, can be very beneficial. Finally, this effort was useful in bringing to the surface a considerable amount of data, not only in the form of statistics, but behavioral and attitudinal information crucial for equal opportunity policy and programs.

Granted all these potential benefits, however, it must be noted that there are risks in such a self-examination. If there is not seen to be some positive change stemming out of the self-evaluation, it will be viewed as primarily a public relations device. Frustration and hostility may follow. The panel found considerable evidence of such attitudes among female and minority male employees at the centers it visited.

The center reports were indicative of a high degree of responsiveness on the part of the center directors to the purposes of the self-evaluation. But there was considerable variation from center to center on the extent to which the top level commitment was transmitted to other levels of management. Several reports cited insufficient management commitment as a weakness of the equal opportunity effort.

Although all centers were asked to follow the same procedures and to use the same format in preparing reports, there was considerable variation in both procedures and format. Overall comparative analysis of the reports was complicated by some of the differences in format.

The self evaluation was discussed at the January 23, 1975, meeting of the Equal Opportunity Council. The panel generally concurs with the overall analysis of the evaluations as summarized by the Council chairman.²⁰

- "1. The process was viewed positively by every Center.
2. The process was valuable for communication and involvement of supervisors.
3. In order for the process to be meaningful, there should be an appropriate follow-up.
4. Major weaknesses that surfaced were poor career counseling, need for career development and need for better communication.
5. This process should be a basis for follow-up.
6. The concensus seems to be that such an extensive process should not be carried out every year, but something is needed annually.
7. The process should be carried out at a time when the Centers know what their constraints will be.
8. It was surprising how similar the results were at every Center."

IV. Applying the Experience of Other Organizations

One of the three principal assignments to the panel was to seek out experience from other organizations that might be effectively applied by NASA in its efforts to deal with equal opportunity problems. The panel was asked to look at both the public and private sectors for such relevant experience. In its approach to this part of the task the panel was guided by several considerations.

1. NASA's heavy reliance on highly specialized technical personnel places the agency in special circumstances which apply to only a limited number of other organizations. A basis for comparing experience exists only in those other government agencies and private corporations having equivalent requirements for technicians, engineers and scientists.

²⁰ Minutes of NASA EO Council Meeting held at Marshall Space Flight Center, January 23, 1975, p. 10.

2. The private sector, as noted above, is in a far stronger position to compete for the limited numbers of minorities and women who enter into these technical career fields. Large corporations offer far more attractive salaries and benefits than government agencies can provide. Moreover, NASA is at a disadvantage even with other government agencies that are not operating under the constraints of reductions in manpower ceilings imposed over many years.

3. Granted the two differences cited above, there is no justification for magnifying them or using them as defensive devices to explain inadequate progress in NASA. Though NASA has its own unique and admittedly difficult problems, it can still learn much from the general philosophical approaches and some of the specific techniques used in other organizations.

4. Although the drive for equal employment opportunity has been under way for quite a while, the record of significant accomplishment is, for the most part, disappointing in either the public or private sector. Most projections of future progress based on a continuation of historical growth curves in minority and female employment suggest that the realization of a parity position still lies far off in the future. The experience of other organizations yields more negative than positive lessons, more lessons of doing too little too late than examples of programs that have directly confronted the challenge of equal opportunity and taken effective measures to deal with it.

Fortunately, however, there are a number of examples of programs with positive results.

A. General Electric Company. General Electric is widely recognized for the commitment it has made to equal opportunity. As a company having a heavy dependence on advanced technology including substantial work under

contract with NASA, its experience may be presumed to be relevant to the issues addressed in this study.

The GE record can be told in part by statistics. Since 1968, the number of black employees has grown by 64% to the point where the black work force numbers nearly 29,000 or about 9.1% of the total. During the period from 1968 to 1973, when the total work force was declining, the proportion of women rose slightly to 29%.

More significant than these numbers is the philosophy of management that led to the change. Top leadership of GE has committed itself to move towards equal opportunity and to hold all levels of management accountable for their contribution to that movement. Perhaps the most significant element of the program is an EEO measurement system with rewards and penalties designed to produce behavioral changes in managers. The format for measurement of progress consists of data assembled at Headquarters and a questionnaire which every general manager must fill out as part of the annual business review. A description of the format appears at Appendix B.

The measurement of managers' performance under this format is directly tied to executive compensation. GE has moved much farther in this direction than most industrial firms. Naturally, there was resistance to this development on the part of some managers who objected to being evaluated on what they regarded as a "non-business" aspect of their performance. They were told, in effect, that equal opportunity is now a business problem and that they were to be held accountable just as much in this area as in other traditional areas of their job performance.²¹

²¹ Purcell, Theodore V., "How GE Measures Managers in Fair Employment," Harvard Business Review, November, 1974.

The quantitative data in these reports is supplemented by narrative descriptions to avoid the trap of too much reliance on "the numbers game." The qualitative data is designed to give a fair and meaningful accounting of equal opportunity programs, including relationships between the company and the employees and local community relationships. While the volume of data collected might seem so massive as to create a deluge in corporate headquarters, the scale of reporting is felt to be justified by the innovation fostered by the system. Each year these reports are combined into a document entitled the "EO/MR Best Buy" report which is circulated throughout the company as a handbook of workable affirmative action programs.²²

The GE effort to assure upward mobility is based on two approaches. One is the so-called accelerated promotion practice. The second is an effort to broaden the base of the pyramid by significantly enlarging the supply of qualified technically trained minorities to be hired at the professional entry level. Acceleration practice inevitably involves a certain degree of preferential treatment which can give the appearance of reverse discrimination. The rationale for such practice is based on several considerations. The Civil Rights Act of 1964 neither requires nor excludes preferential treatment. But Order No. 4 of the Office of Federal Contract Compliance does require that a government contractor remedy any underutilization of minority people thereby calling implicitly for a certain amount of preferential treatment. Acceleration practice enjoys firm management backing as a tool to assure equal consideration of minorities when important employment decisions are made.

²² Purcell, Theodore V. and Toner, Frank J., "Two Major Corporate Strategies toward Full Minority Participation in Business," Article in The Unstable Ground, Edit. S. Prakash Sethi, Melville, 1974.

In their long and careful assessment of the dilemmas presented by the quest for equal opportunity, GE management came to recognize fully that the basic problem would never be solved without broadening the base of recruitment. Minorities could not achieve upward mobility within the ranks of the company unless they had the education and training to permit them to compete. GE has adopted a wide range of programs designed to motivate minority students to enter technical fields from which they have traditionally shied away. One of the more promising efforts is a work-study program which has added significantly to the total numbers of minorities and women in the GE work force.

Although GE is considered to be in the vanguard of industry with respect to equal opportunity, even its record reveals that progress has been unacceptably slow. Despite the increase in the number of black employees, only 2.47% of all blacks hold white collar jobs. Only 2.7% of GE's professional positions are filled by blacks, and only 2% of the managerial category are black. GE, moreover, was the object of a suit filed by the Equal Employment Opportunity Commission in 1974 charging each of the company's domestic installations with discriminatory practices in all phases of employment.²³ Finally, a study which sought to predict future rates of progress on the part of blacks through projections based on continuation of trends during the period from 1966 to 1969, when GE was making a concerted equal opportunity effort, came up with some very disappointing results. These studies indicated that very long periods of time would be required to achieve integration in various sectors of the work force. Integration was taken here to mean an ideal of 10 per cent

²³ Wall Street Journal, 10th of a series of articles on the status of blacks in the United States, December 10, 1974.

of each element of the work force, roughly the equivalent of the proportion of blacks in the national population. Whereas blacks could expect to be integrated in some of the lower paid categories, craftsmen, office and clerical, technicians, etc., within periods of nine to 22 years, it would take 55 years to reach integration in the officials and managers group or 87 years for the professional group if historical growth curves are projected into the future.²⁴ Such extended periods for the accomplishment of goals are clearly unacceptable.

B. Sears, Roebuck and Co.

Another firm that has gained recognition for its positive approach to equal employment opportunity is Sears, Roebuck, the nation's largest retailer with some 50,000 supervisors. The fact that Sears is not engaged in scientific or technical enterprises comparable to NASA's does not detract from the relevance of its equal opportunity effort which could be adapted to any organization. As William Raspberry noted recently, the key element of the Sears program is what the Company calls mandatory achievement of goals or MAG. In the words of the director of the program

"Basically, MAG requires an analysis of staff by job category. Wherever you find underrepresentation, the rule is that for every two job openings in that category, you have to fill one with a black (or a woman), and keep doing it until you reach your goal."²⁵

Mandatory achievement of goals is essentially like the GE accelerated promotion practice. It demonstrates the commitment of management to a corrective program to overcome racism and sexism that have skewed employ-

²⁴ Purcell and Toner, Op. cit., p. 285.

²⁵ As quoted by William Raspberry in "Action on Affirmative Action," Washington Post,

ment opportunity to such a degree that it will take more than blinders to color and sex to set it right.

The Sears approach to equal opportunity reaches far beyond personnel actions and includes heavy emphasis on minority economic development. Sears' vast purchasing program creates an enormous number of business opportunities, and the Company has developed a program for assuring access to these opportunities by minority firms.

Much of this effort involves contracting with minority firms for local services. Sears encounters the same kind of problems confronting NASA in locating minority firms capable of meeting the Company's requirements for manufacturing to supply their retail network. Through the Sears MESBIC (Minority Enterprise Small Business Investment Company), the Company has invested \$500,000 matched with an equal deposit from the Small Business Administration to be used as seed money for minority business ventures. The Sears program seeks to deal with three major problems confronting minority business enterprises, lack of capital, lack of experience and lack of an assured market.

The Raspberry column, after noting that it is in the enlightened self-interest of Sears to help their MESBIC enterprises to stay healthy, concludes, "Now if Sears could find time to hold a few seminars for government officials."

Both the GE and the Sears approach to equal opportunity demonstrate a management philosophy that commends itself for consideration by NASA and other government agencies. The essence of this philosophy is that the short term disruptions ensuing from equal opportunity programs are more than offset by the long range benefits. These benefits extend far beyond the equalizing of opportunity for females and minority males, important as

that objective may be. The unsettling of established social patterns, according to this interpretation, has a positive effect of stimulating change, opening up the system, improving communications, and strengthening the overall management of human resources.

Introducing women and minority men in larger numbers and at higher levels in an organization brings in new attitudes and values which differ from the outlooks of predominantly male white work forces. Supervisors, coming to realize that they are not well equipped to deal with these new values, need to become more open to new methods of managing and upward communication from their own personnel. Sensitivity training programs can foster positive change in attitudes and behavior on the part of supervisors and managers that result in overall improvement of employee-supervisory staff is obviously a positive goal in itself. If programs aimed at the supervisor level are also accompanied by programs designed to give all employees, including women and minority men, a better understanding of the meaning and importance of the work in which they are engaged, the result will be better treatment and use of human resources.

Many of the problems troubling women and minority men in NASA are shared in common by other employees, especially at the lower ranks. A lack of satisfaction in the downward flow of communications, doubts concerning the future of various programs and the agency as a whole, and too little attention to the development of personnel for assuming greater responsibility, all contribute to a low state of morale across the board. The remedies to cure some of the equal opportunity maladies are also applicable to NASA personnel in general.

Minorities entering an organization are likely to look for greater social sensitivity on the part of their supervisors and co-workers.

They also want to understand the value of the work they are asked to do. These are two of the most urgent people problems facing large organizations today. The opening up of communications, the change in customary ways of managing human resources, the raising of the consciousness of managers and supervisors in their dealings with employees can all be classified as long range benefits for an organization. Thus the steps taken to secure equal opportunity can also be regarded as a means of upgrading or professionalizing the personnel administration of the agency.²⁶

V. A Management Strategy for Social Change

For any program whose aim is to secure social change, such as that implied in the concept of equal opportunity, there needs to be a conscious and well thought-out strategy. The literature on social change suggests that successful strategies encompass a number of elements each of which is essential to fulfilling the goals. A model that the panel would recommend for consideration by NASA would include the following elements:

1. policy
2. objectives
3. performance standards
4. feedback
5. consequence system

Some understanding of the nature of change is a prerequisite to the formulation of a strategy for change. What is meant when we speak of organizational change, what causes change, what are the typical

²⁶ Cavanagh, Gerald F., Stewart, Johnny, "Short-versus Long-run Effects of the Introduction of Black Workers into the Firm," article in The Unstable Ground, edit. Sethi, S. Prakash, p. 404.

responses to it, and what are the various options available to managers seeking to effect change?

The concept of change, as it applies to the social structure of an organization, implies an alteration in traditional practices that the power structure uses in making decisions. Whether it be participatory decision-making, fuller disclosure of information to the public, equal opportunity or some other social pressure, organizational status quo is subject to an array of forces for change.

Typical responses to these forces include: selective inattention (ignore it); containment and isolation (bottle it up); co-option (dilute it); or accepting the least possible change (try to neutralize it). Those within the organization who are charged with responsibility for promoting any given change are, of course, seeking to transform negative or resistant attitudes to positive or receptive attitudes.

The force field in which change operates is made up of driving forces and restraining forces. Change agents can opt for increasing the driving forces, decreasing the restraining forces or some combination of the two. In a very general, if not oversimplified sense, increasing the driving forces tends to increase tension, but it usually works faster. Decreasing the restraining forces tends to work slower but with less tension. Increasing the driving forces involves high energy exertion at top levels in the form of orders to be issued, strict goals to be set and tracking of progress. The opposite alternative of decreasing the restraining forces relies on a strategy of persuasion, reasoning and the continued toleration of behaviors different from those being sought through the change process.

It appears that equal opportunity programs within NASA have embraced efforts both to increase driving forces and to decrease restraining

forces. The panel has not been able to discern that the overall approach is based on any strategic consideration of the merits of the various alternatives or how best to combine them. Nor has the panel been able to reach the conclusion that all five elements of the above cited management strategy have been identified and put in place. Parts of each piece exist, but they remain to be put together in a unified whole.

The Administrator of NASA and his Deputy bear the final responsibility for achieving equal opportunity. Only they can make the decision to adopt and implement a strategy for managing social change. They cannot delegate this responsibility. All that can be delegated is this responsibility. All that can be delegated is the assignment to advise and assist. The OEOP and the Equal Opportunity Council are the two logical sources for such advice and assistance. The various elements of a strategy are described below.

1. Policy. This part of the strategy consists of a penetrating inquiry into the full implications of what will be involved in the basic social change being sought and the acceptance on the part of management of those implications. This is a difficult and demanding task. Only the very top management can give the cues that will trigger responses down the line. Other top managements, such as GE, that have really tackled this assignment are relatively few and far between.

This element of the strategy involves looking ahead over a period of years, forecasting a leadership structure with significant female and minority male representation, and plotting a course for reaching that destination. It involves facing up to deeply embedded social attitudes and behavior which resist the concepts underlying equal opportunity.

To know and accept what general policy should govern is to recognize that the task involves a great deal more than changing numbers

in the race and sex ratios. It means making equal opportunity a basic part of the objectives and missions of NASA. It means breaking down many long established conventions. It means reorienting the social consciousness of those who still find equal opportunity incompatible with their inherited social attitudes. Also, among females and minority males, both within the agency and outside, it means building a base for greater acceptance of careers in NASA because of their relative attraction in comparison with other alternatives.

Determining a general policy course to guide an agency in such unfamiliar terrain implies intensive analysis of alternative strategies. One reason why relatively little has been done in other organizations is that such deliberation is difficult, time consuming and fraught with controversy. But this kind of deliberation at the strategic level must occur in order to provide a rational framework for the tactical phase which involves the setting of objectives.

2. Objectives. Deriving out of a considered policy or strategy is the definition of a series of specific objectives. Highest priority must obviously be attached to improving the female and minority male ratios of the employee population. Objectives must be set in terms of organizational units, occupational categories and grade levels.

On the recruitment side, this means both short term hiring from the existing market and, on the longer term, expanding the size of the labor pool through investment of resources with a long-term payout. Specific objectives must be defined for both external and internal programs extending as far into the future as the limits of planning capabilities permit. The process whereby the numerical goals are established

is a key part of setting objectives. Involving line managers in goal setting in such a way that they become committed to the program is itself a critical objective.

But, here again, the numerical goal setting is only a part of the picture. Objectives must also be considered in terms of changing at first behavior and ultimately attitudes. Is there real change in the dynamics of the administrative processes of the agency? Are there measurable indications of an improving morale among female and minority male elements of the work force? Are the working relationships between these elements and the predominantly white male elements improving?

This aspect of the strategy entails a hard look at all existing equal opportunity programs. While these programs may all have certain merit, do they all fit together to form a rational set of objectives? Do the programs correspond with the priorities of these objectives?

3. Performance standards. Once objectives are established, there needs to be a set of criteria for judging progress towards those objectives. For those goals which can be stated in numerical terms it is relatively simple to quantify and judge progress. But social indicators to measure progress in achieving social change are still at the stage of a somewhat primitive art. In fact, devising performance standards beyond the numerical measures of employee counts is perhaps the toughest aspect of an overall strategy. How can an agency definitively assess its progress along a continuum stretching from the origins of a social issue to its resolution? NASA has accumulated extensive experience in developing cost, schedule, and performance standards for tracking its numerous project activities. This experience should be drawn on in tracking EO progress. NASA can also make good use of some of the work

being done in perfecting social indicators and applying them to its measurement of progress in equal opportunity.

Cost effectiveness is an important consideration in establishing performance standards. Existing equal opportunity activities are not being measured by such standards. What has been done, for example, to measure the cost effectiveness of the recruiting by individual centers at minority institutions? How can the cost-effectiveness of hiring women and minority males be improved through the work of the Equal Opportunity Professional Recruiting Office? In seeking to reach junior high school students to motivate them towards engineering or scientific careers, could NASA develop more cost effective programs by collaborating with other technical and scientific agencies?

Performance standards that give a clear signal of how an agency is progressing are essential to meaningful self-evaluation. The next self-evaluation should be preceded by heavy emphasis on the design of such standards for measurement.

4. Feedback system. An effective feedback system is essential to the measurement of performance. The Personnel Management Information System in NASA gives good visibility into the numerical aspect of measurement. But there must also be a feedback in the less easily quantifiable areas of attitudes, morale, informal working relationships, and the overall climate. A major problem to be overcome here is the natural tendency to stress the good news and suppress the bad. Information is filtered as it goes up the chain of command. Managers at the top are likely to receive distorted impressions of what is going on in the lower levels of an organization.

In conducting its investigations, the panel found more than a few indications that this filtering process, however unintentional,

was screening out the kinds of information that might not sit well with top management. On the other hand, the panel also found a number of instances where equal opportunity advisory groups were interfacing directly with center directors in open and candid exchanges of information. Such direct relationships should be encouraged.

The feedback system should be designed to tie in effectively to the self-evaluation process. Both the formal numerical reporting and the non-numerical data need to be readily accessible to those responsible for self-evaluation.

5. Consequence system. No strategy for social change is complete without an effective consequence system. Good performance must be rewarded while poor performance must be penalized. Until recently, the element which seemed to be most seriously lacking in a five-part management strategy was a consequence system with teeth. When the Personnel Office established a system of monthly reporting by center on the meeting of hiring goals, a major part of a consequence system was put in place. Center directors and top management are closely monitored in the Office of the Associate Administrator for Center Operations, and they are keenly aware that their record is being watched. The inclusion of EO progress reports as part of regular reporting on program or project status represents an effective cue for top management to signal lower levels of management of the serious purpose attached to equal opportunity.

To give this consequence system full effect, it should develop in two respects. First, the sense of awareness felt at the top level of center management must be communicated to the first line supervisor through every level down. These supervisors often play the critical role in hiring decisions, yet, as noted above, they frequently are the least

responsive to the equal opportunity message. Second, the sense of accountability for achieving hiring goals from center to center needs to be expanded to cover all equal opportunity performance. Hiring is only one part of the total picture.

A consequence system will achieve results only if it is highly visible and if it is perceived to bring about real rewards and penalties. Unless it comes to be seen that a manager's equal opportunity record has effect on his career, the consequence system will not be taken very seriously.

Finally, the working of the consequence system will depend on the development of the other four elements of the management strategy. Those who are affected by the consequence system must understand what the agency policy is, what specific objectives have been set under the policy, what performance standards are used, and how the feedback system works.

During the course of its assignment the panel has sought to gain a perspective on where NASA stands today on the equal opportunity front in comparison with where it stood several years ago or where it will stand several years into the future. In some key areas, as the foregoing report has demonstrated, NASA has made important progress, particularly in the last two or three years. The progress is represented in the statistical records on minority males and women in the work force, in the identification of some key problem areas for emphasis such as increasing the resource pool in the number and variety of programs being carried out, and in the effort to give increased stature to the equal opportunity program. The fact that NASA was responding to outside political pressures to improve its position relative to other government agencies does not take away from what has been accomplished. The message that should come through most clearly, however, is that equal opportunity

is still a long way from being achieved and that many uphill battles will have to be fought and won before that day arrives.

In the face of that challenge it would seem to be appropriate for those concerned with equal opportunity, and particularly the Equal Opportunity Council, to step back and look at the total picture from the broadest possible perspective. With the benefit of the data gathered in the self-evaluation and with the insights of the outsiders provided by this report, there would seem to be much to be gained by addressing some of the larger and perhaps more difficult questions. Do all of the pieces fit together in a logical whole that effectively serves the intended purposes? Can all the elements of a management strategy be pulled together in such a way as to optimize the prospects for achieving equal opportunity? Can the roles and responsibilities of the equal opportunity staff, the personnel office and line management be sharpened or better defined in relationship to one another?

As these questions are considered, it would be helpful to keep in mind still another question of overriding significance. What is the stature of equal opportunity as a concept and a reality in NASA? How is this stature changing? On a scale of values is it perceived as more good than bad, more positive than negative? On a scale of power is it seen as strong or weak?

Maintaining the stature of equal opportunity means retaining a high measure of support for both the goal and for the programs to achieve the goal. The two do not necessarily go hand in hand. The goal is likely to be accepted more widely on grounds of principle. Programs to achieve the goal will be accepted only if they are perceived to be practical and workable in the environment in which they operate, related to a total management strategy, and equitable in their impact on all the members of the work force.

NASA EQUAL OPPORTUNITY PANEL

Dr. James A. Bayton, Panel Chairman
Department of Psychology
Howard University

Dr. Herman R. Branson
President
Lincoln University

Ms. Aileen C. Hernandez
Urban Affairs Consultant
Aileen Hernandez Associates

Mr. Ronald B. Lee
Region Manager of
Technical Service
Xerox Corporation

Mr. William A. Medina
Chief, Executive Development and
Training Branch
Office of Management and Budget

Ms. Caroline E. Robinson
National Field Representative
American Youth Action Organization, Inc.

Dr. Andrew Schultz, Jr.
School of Engineering
Cornell University

Dr. Erasmus H. Kloman
Panel Secretary

PRECEDING PAGE BLANK NOT FILMED

Appendix B

General Electric Equal Opportunity and Minority Relations Measurement Format

The following excerpt is quoted from Harvard Business Review, November-December, 1974.

Since 1970 the company has conducted annual audits using its 6-part EO/MR measurement format. (EO/MR stands for "equal opportunity and minority relations.") The format consists of data assembled at corporate headquarters and a questionnaire which every general manager must fill out as part of the annual business review process. From the smallest departments to the company as a whole, the performance of every manager (GE has more than 26,000) and of every plant and component of the corporation is subject to inline review. The program has been very effective.

What the format measures

Part I of the EO/MR format simply gives component identification data.

Part II presents demographic data, giving the current and projected population growth in the various labor market areas. Here the particular plant or component reports on the number of black, Spanish-surnamed, Oriental, and American Indian employees compared with the total population of that plant's labor market area. These data give the minority profile for the Standard Metropolitan Statistical Area (SMSA) in which the plant is located.

Part III gives the Minority Participation Index. This is the ratio of the percentage of minorities in the plant work force to the percentage of minorities in the SMSA. Figures for the past and current year and a five-year projection are given. An index of 1.0 would indicate the "ideal" minority population in a given plant, that is, the same percentage of minorities in the plant work force as in the local community. (I shall examine options for the "ideal" later.)

Part IV gives performance goals and data on the participation of minorities and women throughout the nine federally standardized job categories in the plant component, from top managers to unskilled laborers. This section calls for performance analysis in relation to goals in the past year and calls for new goals for the next five years. In addition, all hiring, promotion, and termination statistics are secured for the past year.

Part V states the goals for the next year and for five years hence for the exempt minority and women work forces of each plant, as distributed through the 28 GE salary levels. This information refines the data provided in Part IV; it pinpoints where minorities and women are located in the upper echelons. Part V elicits information on the numbers and percentages of minority managers and other minority exempt, and the numbers and percentages of women managers and other women exempt, in each of five groups clustered according to their characteristics.